

Claims

1. A system for the dynamic providing of storing units (120) with goods (10) contained therein, said system consisting at least of:

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- a storage area (1) consisting of at least one rack module composed of at least two rack plates (100) separated from each other by an alley (130), for storing the storing units (120) in rack shelves (110);

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- a floor-bound transport system (2) with at least one vehicle that is designed and suited to take storing units (120) out of said rack shelves (110) and to transport same to at least one providing station (51, 52, 53, 54) inside or outside said storage area (1);

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- a store feeding system (3) working floor-free and comprising at least one storing device that is designed and suited to take storing units with goods (10) out of said rack shelves (110) and to transport same above at least one driving track of said vehicle(s) in hanging to at least one commissioning shelf for said floor-bound transport system (3);

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- a control system (4) that is designed such that it collects at least the occupancy data of the storing places and the movement and/or position data of said floor-bound vehicles (2) and of said floor-free storing devices (3) and that, by using this information, coordinates and controls the substantial functions of placing in storage and/or returning to storage, storing and/or intermediately buffering, removing from storage and/or providing of the entire system.

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2. The system according to claim 1, wherein said floor-bound transport system (2) and/or said floor-free store feeding system (3) is designed and suited to transport storing units (120) of said rack shelves (110) from at least one providing station (51, 52, 53, 54) or one commissioning shelf inside or outside said storage area (1) back again.

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3. A system for the providing of storing units (120) with goods (10) contained therein, said system consisting at least of:

5 - a storage area (1) with rack plates (100) separated from one another by at least one alley (130), comprising rack shelves (110) for storing the storing units (120) in the rack shelves (110);

10 - a floor-bound transport system with at least one vehicle (2) that is designed and suited to take storing units (120) out of said rack shelves (110) and to transport same through the at least one alley (130) to at least one first area (50) inside or outside said storage area (1);

15 - a store feeding system (3) working floor-free with at least one traversing unit (31) with load receiving means (32) which is designed and suited to take storing units (120) with goods (10) out of said rack shelves (110) and to transport same above a driving track of said at least one vehicle (2) in hanging to a second area;

20 - at least one operating unit (4) that is designed to collect at least substantial state data of said at least one vehicle (2) and said at least one traversing unit (31) with load receiving means (32), so that collisions of said at least one vehicle (2) and said at least one traversing unit (31) with load receiving means (32) are avoided.

- 25 4. The system according to claim 3, wherein said at least one vehicle (2) is a driverless transport vehicle.

5. The system according to claim 4, wherein said at least one driverless transport vehicle is designed to transport at least one storing unit (120).

- 30 6. The system according to claim 5, wherein the transport units are driverless transport vehicles or trains of barges for one or a plurality of storing units (120).

7. The system according to any of claims 1 to 6, wherein said at least one driverless transport vehicle comprises lifting means for lifting and lowering said storing units (120).
- 5 8. The system according to claims 1, 2, or 3, wherein said traversing unit (31) with load receiving means (32) is positioned in said at least one alley (130).
9. The system according to claim 8, wherein said traversing unit (31) is designed to be movable on rail-like guiding means.
- 10 10. The system according to any of claims 8 or 9, wherein said load receiving means (32) is connected with said traversing means (31) via connecting means.
11. The system according to any of claims 8, 9, or 10, wherein said load receiving means
15 (32) is designed such that storing units (120) are positioned thereon in standing.
12. The system according to any of claims 8, 9, or 10, wherein said load receiving means (32) is designed such that storing units (120) are positioned therebelow in hanging.
- 20 13. The system according to claim 3, wherein said first area inside said storage area (1) is a providing station that is formed in a rack shelf (110).
14. The system according to claim 3, wherein said first area (50) outside said storage area (1) is a providing station that is formed as commissioning place (54).
- 25 15. The system according to claim 3, wherein said first area (50) outside said storage area (1) is a providing station that is formed as supply and removal area of a manufacturing spot.
- 30 16. The system according to claim 3, wherein said first area (50) outside said storage area (1) is a providing station that is suited as intermediate buffer.

17. The system according to claim 3, wherein said first area (50) outside said storage area (1) is a providing station that is suited as store.
18. The system according to claim 3, wherein said second area (50) inside said storage area (1) is a providing station that is formed in a rack shelf (110) and is suited as commissioning place.
19. The system according to claim 3, wherein said second area (50) inside said storage area (1) is a providing station that is formed in a rack shelf (110) and is suited as supply and removal area of a manufacturing spot.
20. The system according to claim 3, wherein said second area inside said storage area (1) is a providing station that is formed in a rack shelf (110) and is suited as intermediate buffer.
21. The system according to claim 3, wherein said second area (50) inside said storage area (1) is a providing station that is formed in a rack shelf (110) and is suited as store.
22. The system according to claim 3, wherein at least the respective movement and position data of said at least one vehicle (2) and said at least one traversing unit (31) with load receiving unit (32) are suited as state data.
23. The system according to claim 3, wherein said at least one operating unit (4) is connected with said at least one vehicle (2) and said at least one traversing unit (31) with load receiving means (32) for the exchange of data.
24. The system according to claim 16, wherein the exchange of data is performed via electro-magnetic waves.